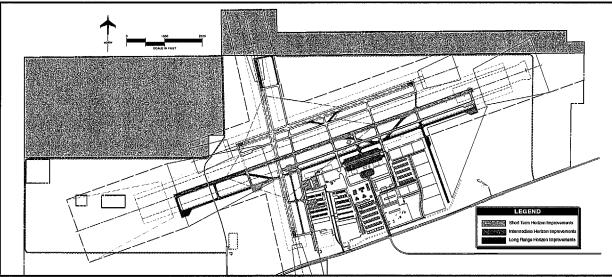


Chapter Six

FINANCIAL PLAN

FINANCIAL PLAN





The successful implementation of the Ryan Airfield Master Plan will require sound judgement on the part of airport management. Among the more important factors influencing decisions to carry out a recommendation are timing and airport activity. Both of these factors should be used as references in plan implementation.

Experience has indicated that major problems can materialize from standard time-based format of traditional planning documents. The problems typically center around inflexibility and an inability to deal with unforeseen changes that may occur.

While it is necessary for scheduling and budgeting purposes to consider timing of airport development, the actual need for facilities is established by airport activity. Proper master planning implementation suggests the use of airport activity levels rather than time as guidance for development.

This chapter of the Master Plan is intended to become one of the primary references for decision-makers responsible for implementing master plan recommendations. Consequently, the narrative and graphic presentations must provide understanding of each recommended development item. This understanding will be critical in maintaining a realistic and cost-effective program that provides maximum benefit to the community.

AIRPORT DEVELOPMENT SCHEDULES AND COST SUMMARIES

the specific needs Once improvements for the airport have been established, the next step is to determine a realistic schedule and costs for implementing the plan. This section examines the overall cost of development and presents a development schedule. The recommended improvements are grouped and divided into three planning horizons of short term, intermediate

term, and long range. **Table 6A** summarizes the key activity milestones for each planning horizon.

TABLE 6A Planning Horizon Summary Ryan Airfield							
	1998	Short Term	Intermediate Term	Long Range			
General Aviation							
Based Aircraft Annual Operations	234	265	292	353			
Local	106,000	123,000	137,000	169,000			
Itinerant	<u>49,000</u>	<u>59,000</u>	<u>69,000</u>	90,000			
Total GA Operations	155,000	182,000	206,000	259,000			
Military							
Based Aircraft	0	0	0	0			
Operations	1,064	2,000	2,000	2,000			
Total Airport Operations	156,064	184,000	208,000	261,000			

The short term planning horizon covers items of highest priority as well as items that should be developed as the airport approaches the short term activity milestones. Priority items include improvements related to safety and pavement maintenance. included are improvements to facilities that are inadequate for present demand. Because of their priority, those items will need to be incorporated into the Authority budgeting process and FAA and ADOT programming. assist in this process, short term projects are scheduled year-by-year over a five year period.

When short term horizon activity levels are reached, it will be time to program for the intermediate term based upon the next activity milestone. Also, as pavements age, maintenance of these pavements will need to be addressed. Similarly, when the intermediate term milestones are reached, it will be time to program for the long range.

Due to the conceptual nature of a master plan, implementation of capital projects should occur only after further refinement of their design and costs through architectural and engineering analyses. The cost estimates were increased by 32 to 36 percent in order to allow for engineering, architecture, administrative costs, as well as construction contingencies that may be experienced by the project. Capital costs in this chapter should be viewed only as estimates subject to further refinement during design.

Nevertheless, these estimates are considered sufficiently accurate for the planning level analyses in this chapter.

Cost estimates for each development project listed in **Table 6B** are presented in current (1999) dollars.

Capita	TABLE 6B Capital Improvement Program Ryan Airfield (1999 Dollars)					
No.	Project	Total Costs	FAA Eligible	ADOT	TAA	
FY 200			employee states of the state of			
1 2 3 4 5	Overlay RW 6R-24L Install Self-Serve Fuel Island (Taxiway D) Install TW D Fuel Island Ramp Install Airport Vehicle Fuel Tank Relocate and Replace AWOS-3	\$1,120,000 201,000 241,000 40,000 80,000	\$1,019,872 0 219,455 0 0	\$50,064 0 10,773 0 72,000	\$50,064 201,000 10,773 40,000 8,000	
	Subtotal FY 2000	\$1,682,000	\$1,239,327	\$132,837	\$309,837	
FY200		1	T	T		
1 2 3 4 5 6 7 8	Northside Property Acquisition (148 ac.) Reconstruct TW's B and D/North Apron Construct South Auto Parking Extension Overlay Access Roads and Parking Lot Construct Partial Parallel Taxiway E Install Perimeter Security Fence Install Security Camera System Northwest Parcel Conveyance (314 ac.)	\$592,000 804,000 9,000 158,000 363,000 358,000 50,000	\$539,075 732,122 0 0 330,548 325,995 0	\$26,462 35,939 0 142,200 16,226 16,003 0	\$26,462 35,939 9,000 15,800 16,226 16,003 50,000	
	Subtotal FY 2001	\$2,334,000	\$1,927,740	\$236,830	\$169,430	
FY 200	2 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	Control of the Contro				
1 2 3 4 5 6	Construct TW 5 Extension Realign TW 2 Demolish Building 74 Demolish Building 75 Construct Perimeter Service Road (Phase I) Upgrade Existing Airfield Drainage System Install Box Culverts under Runway 6R RSA	\$109,000 203,000 50,000 80,000 596,000 1,397,000 1,738,000	\$99,255 184,852 0 0 542,718 1,272,108 1,582,623	\$4,872 9,074 0 0 26,641 62,446 77,689	\$4,872 9,074 50,000 80,000 26,641 62,446 77,689	
	Subtotal FY 2002	\$4,173,000	\$3,681,556	\$180,722	\$310,722	
FY 200		######################################		- Constitution of the Cons		
1 2 3 4 5 6 7	Airfield Pavement Preservation Install PAPI-2 RW 6L-24R Widen and Strengthen RW 6R-24L and TW B Extend RW 6R-24L and TW C to 6,300 ft. Strengthen TW 4 Install REIL's on RW 24L Install Infield Drainage Culverts	\$540,000 50,000 2,027,000 1,601,000 106,000 35,000 1,738,000	\$0 45,530 1,845,786 1,457,871 96,524 31,871 1,582,623	\$486,000 2,235 90,607 71,565 4,738 1,565 77,689	\$54,000 2,235 90,607 71,565 4,738 1,565 77,689	
	Subtotal FY 2003	\$6,097,000	\$5,060,204	\$734,398	\$302,398	
FY 200	4 (10)					
1 2 3 4	Construct Helipad Construct Helipad Taxiway and Apron Construct Helipad Auto Parking and Access Construct Self-Maintenance Bay	\$54,000 93,000 25,000 42,000	\$49,172 84,686 0 0	\$2,414 4,157 22,500 0	\$2,414 4,157 2,500 42,000	
	Subtotal FY 2004	\$214,000	\$133,858	\$29,071	\$51,071	
	SHORT TERM HORIZON TOTAL	\$14,500,000	\$12,042,685	\$1,313,858	\$1,143,458	

Capit:	E 6B (Continued) al Improvement Program Airfield				
No.	Project	Total Costs	FAA Eligible	ADOT	TAA
INTE	RMEDIATE HORIZON				
1	Install MIRL RW 6L-24R	\$167,000	\$152,070	\$7,465	\$7,465
2	Construct Admin/Terminal Building	664,000	0	332,000	332,000
3	Extend Airfield Drive	99,000	90,149	4,425	4,425
4	Construct Admin/Terminal Parking	91,000	0	81,900	9,100
5	Construct Terminal Parking Apron	1,917,000	1,745,620	85,690	85,690
6	Construct Fire Station	591,000	0	532,260	59,140
7	Install Jet Fuel Storage (12,000 gal.)	153,000	0	0	153,000
8	Water System Improvements (Phase I)	1,401,000	0	1,260,900	140,100
9	Sanitary Sewer Improvements (Phase I)	1,024,000	0	921,600	102,400
10	Runway/Taxiway Preservation	402,000	366,061	17,969	17,969
11	Upgrade Runway/Taxiway Signage	483,000	439,820	21,590	21,590
12	Install MIRL RW 15-33	136,000	123,842	6,079	6,079
13	Extend RW 6R-24L and TW C to 7,200 ft.	1,371,000	1,248,433	61,284	61,284
14	Install Box Culverts in Extended RW 6R RSA	550,000	500,830	24,585	24,585
15	Construct Parallel Taxiway C	1,654,000	1,506,132	73,934	73,934
16	Construct High Speed Exits RW 6R-24L	260,000	236,756	11,622	11,622
17	Install REIL's on RW 6L-24R	70,000	63,742	3,129	3,129
18	Install REIL's on RW 15-33	70,000	63,742	3,129	3,129
19	Install PAPI-2 on RW 15-33	50,000	45,530	2,235	2,235
20	Install PAPI-4 on RW 6R	40,000	36,424	1,788	1,788
21	Extend TW 4 South	97,000	88,328	4,336	4,336
22 23	Construct East-West Access TW from TW 4	172,000	156,623	7,688	7,688
23	Construct TW 4 Turnout	48,000	43,709	2,146	2,146
	INTERMEDIATE HORIZON TOTAL	\$11,510,400	\$6,907,812	\$3,467,754	\$1,134,834
LONG	RANGE HORIZON				
1	Construct Perimeter Service Road (Phase II)	\$1,292,000	\$1,176,495	\$57,752	\$57,752
2	Extend RW 6R-24L and TW C to 8,300 ft.	1,462,000	1,331,297	65,351	65,351
3	Construct High Speed Exit RW 6R	130,000	118,378	5,811	5,811
4	Construct High Speed Exits RW 6L-24R	117,000	106,540	5,230	5,230
5	Sanitary Sewer Improvements (Phase II)	314,000	0	282,600	31,400
6	Install MALSR on RW 6R	450,000	409,770	20,115	20,115
7	Install SALS on RW 24L	175,000	159,355	7,823	7,823
8	Install MITL on TW C and Exits	412,000	375,167	18,416	18,416
9	Install MITL on TW's D & E and Exits	276,000	251,326	12,337	12,337
10	Install MITL on TW A and Exits	276,000	251,326	12,337	12,337
11	Widen Airfield Drive	197,000	179,388	8,806	8,806
12	Extend TW 5 South	581,000	529,059	25,971	25,971
13	Construct TW 5 Turnout	48,000	43,709	2,146	2,146
14 15	Extend Connector Road East Extend PW 15 33 and TW D to 4 800 ft	400,000	364,240	17,880	17,880
16	Extend RW 15-33 and TW D to 4,800 ft. Construct Channel and Detention Basins	695,000	632,867	31,067	31,067
17	Water System Improvements (Phase II)	3,288,000 770,000	2,994,053 0	146,974 693,000	146,974 77,000
	LONG RANGE HORIZON TOTAL	\$10,833,000	\$8,922,969	\$1,413,615	\$546,415
	TOTAL PROGRAM COSTS	\$36,893,400	\$27,873,466	\$6,195,227	\$2,824,707

SHORT TERM IMPROVEMENTS

As indicated above, the Short Term Horizon is the only development stage

that is correlated to time. This is because development within this initial period is concentrated first on the most immediate needs of the airfield and landside areas. Therefore, the program is presented year-by-year for the first five years to assist in capital Short improvement. term improvements presented in Table 6B are estimated at \$14.4 million. Many of the projects included in the short term are designed to increase and enhance operational efficiency, capacity, and safety. Implementation of the airport's Drainage Basin Management Plan also begins in the Short Term.

Pavement Rehabilitation: A 1997 pavement management study for Ryan Airfield indicated that the older pavements on the airport were in immediate need of repair and maintenance. This included primary Runway 6R-24L, Taxiway B and its access taxiways, Taxiway D, as well as the north parking apron. Other sections of airfield taxiways were recommended pavement for preservation projects such as a seal coat and shoulder grading. These projects are included in the short term with the runway getting the highest priority, being scheduled for fiscal year (FY) 2000.

Property Acquisition: A major recommendation of the previous Master Plan was property acquisition to protect the approaches to the airport. That acquisition is nearly complete. The recommendations of this Master Plan update considers improvements and revisions to FAA design standards that require additional protection on the Runway 15 approach, the Runway 24 approach, and other areas on the north side of the airport that would be within the future 65 DNL noise exposure contour (see Appendix C). Property

acquisition in the short term horizon is estimated at 148 acres.

Airfield Improvements: Airfield improvements planned for the short term include taxiway realignment, an upgrade to the primary runway, and runway approach aid improvements.

6R-24L and associated. Runway taxiways needs to be strengthened to accommodate the current design aircraft. This 73,000 pound dual wheel design would also accommodate business jet aircraft. The runway would be widened to 100 feet when it is strengthened. The runway should also be extended to the west to move the threshold out of the intersection with Runway 15-33. The initial section of new parallel Taxiway C would be developed to extend from Taxiway D to the new Runway 6R threshold. This is planned as a 800 foot extension to align with the threshold of the parallel runway.

Taxiway 2 is recommended to be converted from two, undersized parallel taxiways to a single, 35 foot wide taxiway. The taxiway would also be straightened so that the south half of the taxiway is in alignment with the north half. A new partial parallel taxiway to along the southern half of Runway 15-333 is also programmed. Taxiway E will provide two-way circulation along this side of the terminal area.

Other airfield improvements planned for the short term include installing PAPI-2's on the parallel Runway 6L-24R and REIL's on the end of Runway 24L.

Helicopter Facilities: As indicated on the airport layout plan, a helipad is planned to provide a separate landing area for helicopters. In addition, a helicopter taxiway and apron parking are planned for development if and when demand indicates the need.

Other Improvements: Other short term improvements include installation of perimeter fencing and the development of the first phase of a perimeter service road. Airfield drainage improvements recommended in the airport's basin management plan are scheduled to begin in the short term. Priority is given to airfield drainage that can be programmed to with other short term airfield improvements. A self-service fuel island adjacent to Taxiway D is programmed. A self-maintenance bay is also programmed adjacent to the north Finally, a security camera system is programmed for installation in the short term.

INTERMEDIATE TERM IMPROVEMENTS

The Intermediate Planning Horizon encompasses development related to key improvements necessary to aid in improving existing facilities while also providing additional facilities required to meet increased aviation demand.

A critical airside improvement item is related to maintaining runway and taxiway pavements. The pavement preservation program based upon the 1997 Pavement Management Study will continue in the intermediate term with seal coat and shoulder grading along

the parallel and crosswind runways and their respective taxiways.

Airfield lighting and signage improvements for enhancing safe and efficient airfield operations are also programmed in the intermediate term. These include adding medium intensity runway lighting (MIRL) and REIL's to the parallel and crosswind runways. PAPI-2 are also programmed for crosswind Runway 15-33. In addition to completing the runway lighting, a signage upgrade is also programmed during the intermediate term.

As demand warrants, the primary Runway 6R-24L would be extended west to a length of 7,200 feet. The new parallel Taxiway C would also be extended to the new threshold. During the intermediate term, Taxiway C would also be extended east to provide a full length parallel taxiway for Runway 6R-24L that meets design standards for Category I instrument approach minimums. Additional airfield drainage improvements are tied to this runway extension. taxiway improvements programmed for the intermediate term include high speed exits for the primary runway.

Landside improvements in the intermediate term planning horizon include the development of a new central apron area along the primary runway and between Taxiways 2 and 4. This will involve the development aircraft parking, a terminal/administration building, auto parking, fixed base operator sites, and a fire station. Waco Way will be extended to the north to serve this new area that is designed to be a focal point for the

station. Airfield Drive will be extended to the north to serve this new area that is designed to be a focal point for the airport. Additional areas for hangar development will be opened up in the intermediate horizon with the extension of Taxiway 4 to the south.

The total cost of the intermediate term development is estimated at \$11.5 million.

LONG RANGE IMPROVEMENTS

The long range planning horizon considers development projects that will ultimately produce an airport capable of accommodating all of the aviation activity and requirements anticipated for the planning period.

If demand warrants the primary Runway 6R-24L would be extended to its ultimate length of 8,300 feet. The long range horizon also programs a MALSR system for reducing the airport minimums to one-half mile. An extension of the crosswind Runway 15-33 is also programmed for the long range. Installing a short approach light system (SALS) on Runway 24L has also been planned to provide for three-quarter mile visibility minimum requirements.

In the long range, high speed taxiway exits are planned for Runway 6L-24R. Medium intensity taxiway lighting (MITL) is also programmed to be installed on the airfield taxiway system.

Landside improvements in the long range include expansion of the hangar and storage facilities to the east. This will include extending Taxiway 5 south to open up additional development parcels, and extending a new road east from Airfield Drive to provide ground access to the new development area. The final elements of the basin management plan are included in the long range horizon. These include the development of drainage channels and detention basins in each of the drainage areas on the south side of the airport. These improvements will open up additional frontage between the primary runway and Ajo Highway for future development.

The total cost of development for Long Range development is estimated at \$10.8 million. Exhibits 6A though 6G presents a graphical depiction of planned improvements over the long range planning period.

CAPITAL IMPROVEMENTS FUNDING

Financing capital improvements at the airport will not rely exclusively upon the financial resources of the Tucson Airport Authority. Capital improvements funding is available through various grant-in-aid programs on the state and federal levels. The following discussion outlines the key sources for capital improvement funding.

FEDERAL AID TO AIRPORTS

The United States Congress has long recognized the need to develop and maintain a system of aviation facilities across the nation for national defense and promotion of interstate commerce.

maintain a system of aviation facilities across the nation for national defense and promotion of interstate commerce. Various grants-in-aid programs to public airports have been established over the years for this purpose. The current federal grant-in-aid program is the Airport Improvement Program (AIP) of 1982. AIP has been reauthorized several times with the most recent reauthorization (the Federal Aviation Authorization Act of 1997) being extended through federal fiscal year 1999 on a multi-month basis.

The source for AIP funds is the Aviation Trust Fund. The Aviation Trust Fund was established in 1970 to provide funding for aviation capital investment programs (e.g., facilities and equipment, research and development, and grants for airport development and expansion A majority of the FAA's projects). operations account is financed through the Aviation Trust Fund. The Aviation Trust Fund is funded by federal user airline tickets. taxes on registrations. aviation fuel lubricants, tires and tubes, as well as other aviation-related fees.

In Arizona, general aviation airport development projects that meet FAA's eligibility requirements can receive 91.06 percent funding from AIP. Property acquisition and airfield, aprons, and access road improvements are examples of items eligible funding. General aviation terminal buildings, hangars, automobile parking, fueling facilities, and most utilities are not generally eligible.

A primary feature of AIP funding which must be recognized and properly considered is that these funds are distributed on a priority basis. These priorities are established by each FAA Regional Office based upon the number and dollar amount of assistance applications. The program provides 75 to 94 percent funding for eligible projects at airports. It also ensures, through an entitlement program, that primary commercial service airports, such as Tucson International Airport, receive a guaranteed minimum of federal assistance each year based on their enplaned passenger levels.

As a result, Ryan Airfield would be competing with other airports in Arizona, the FAA Western Region, as well as the remainder of the country for discretionary funds. Therefore, discretionary funds are not assured. Table 6B outlines the amount of funding that Ryan Airfield could be eligible for from AIP. If the funding is not forthcoming in the form of AIP grants, then projects would either be delayed or require funding from other sources. One of those sources is the Arizona Department of Transportation.

FAA FACILITIES AND EQUIPMENT PROGRAM

The Airway Facilities Division of the FAA administers the national Facilities and Equipment (F&E) Program. This annual program provides funding for the installation and maintenance of various navigational aids and equipment for the national airspace system and airports. Under the F&E program, funding is provided for FAA air traffic control towers, enroute navigational aids such as the VOR, and on-airport navigational aids such as PAPI's and approach lighting systems.

Facilities Division for the installation and maintenance of navigational aids through the F&E program.

Recommended improvements in this master plan which may be eligible for funding through the F&E program include the MALSR for Runway 6R, SALS for Runway 24L, REIL's for the other runway ends, and PAPI's for all approaches. Should the Airway Facilities Division of the FAA install these navigational aids at the airport, they would be operated and maintained by the FAA at no expense to the airport. For planning purposes, the CIP in Table 6B depicts these facilities being funded through the Airport Improvement Program. This is sometimes done when F&E funding is not forthcoming. In some cases, the facilities are then maintained by the FAA through an agreement between the FAA and the airport.

STATE AID TO AIRPORTS

In support of the state airport program, the State of Arizona also participates in development of airport improvements through the Arizona Department of Transportation (ADOT). source for State improvement funds is the Arizona Aviation Fund. Taxes levied by the State on aviation fuel, flight property, aircraft registration tax, and registration fees, as well as interest on these funds are deposited in the Arizona Aviation Fund. The Transportation Board establishes the policies for distribution of these State funds.

Under the State of Arizona grant program, an airport can receive funding

for one-half (4.47 percent) of the local share of projects receiving federal AIP funding. The State also provides 90 percent funding for projects, such as pavement maintenance, non-revenue auto parking and general aviation public terminals, which are not eligible for AIP funding. In some cases, the State will also fund key eligible projects. when federal funding is not forthcoming. The State sets a maximum amount that any airport can receive annually. This amount is revised annually but in recent years has been between \$900,000 and \$1.0 million.

The Arizona Department of Transportation - Aeronautics Division (ADOT) has also established an Airport Loan Program. This program was established to enhance the utilization of State funds and provide a flexible funding mechanism to assist airports in funding improvement projects. Eligible projects include runway, taxiway, and apron improvements, land acquisition. planning studies, and the preparation of plans and specifications for airport construction projects, as well as revenue generating improvements such as hangars and fuel storage facilities. Projects which are not currently eligible for the State Airport Loan Program are considered if the project would enhance the airport's ability to be financially self-sufficient.

There are three ways in which the loan funds can be used: Grant Advance, Matching Funds, or Revenue Generating Projects. The Grant Advance funds are provided when the airport can demonstrate the ability to accelerate the development and construction of a multi-phase project.

accelerate the development and construction of a multi-phase project. The project(s) must be compatible with the Airport Master Plan and be included in the ADOT 5-year Airport Development Program. The Matching Funds are provided to meet the local matching fund requirement for securing federal airport improvement grants or other federal or state grants. Revenue Generating funds are provided for airport-related construction projects that are not eligible for funding under another program. The availability of funds through this program is subject to the aviation revenues generated in the State.

LOCAL SHARE FUNDING

The balance of project costs, after consideration has been given to the various grants available, must be funded through airport resources. Usually, this is accomplished through the use of airport earnings and reserves, to the extent possible, with the remaining costs financed through revenue bonding.

Ryan Airfield is one of two airports managed and operated by the Tucson Airport Authority. As a reliever airport for Tucson International Airport, Ryan Airfield's operation and development, in part, serves to provide a convenient and alternative for attractive general aviation in the Tucson area. As such, the Tucson Airport Authority operates both airports as one fiscal entity. Thus it is difficult to break down the Ryan Airfield revenues and expenditures separately, therefore a cash flow analysis cannot be provided.

The following subsections, however, do provide a review of the sources of operating revenue that are available at Ryan Airfield to assist in meeting operating expenses and capital improvement program costs for the airport. These include land leases and fuel revenues, and other income sources.

Land Leases

The Tucson Airport Authority currently leases over 40 acres of land in the airport terminal area to various entities for aviation-related uses. Ryan Airfield is fortunate compared to many airports in that there is additional land available for development to meet all future general aviation development needs. Sizable areas will remain on the airport that are suitable for commercial and industrial development. The available land not only offers flexibility in the development of the airport, but also a source for operating revenue.

At Ryan Airfield, land leases are provided for developers to build and lease hangars. The Airport Authority does not lease hangars to individuals, and virtually all existing hangar development has been provided by private sources. This is anticipated to continue in the future at Ryan Airfield, as long as private development demonstrates that it will meet the demand in an orderly and competitive manner.

This could include private development of the terminal/administration building, even though the capital improvement program depicts the potential for development by the Airport Authority. If the Airport Authority does develop the terminal. It would likely lease some space in the building to aviation-related users.

Current land leases on the airport range from \$0.026 per square foot (psf) to \$0.0722 psf. The lower rates are from older leases that will expire in the next two years. Newer leases are more in line with the higher rate. It is recommended that all future leases include a clause to permit periodical adjustments for inflation.

Tie-downs are another source of revenue to the airport that is similar to a land lease. Local tie-downs are leased to individual aircraft owners on a monthly basis while fees are charged for transient tie-downs on an overnight basis. Tie-down fees vary with the size and type of aircraft, however, a monthly fee of \$35 for each local tie-down and \$3.50 a night for overnight transient tie-down is charged.

Fuel Revenues

Fuel sales at Ryan Airfield are provided primarily by the Tucson Airport A self-fueling facility is Authority. available on the south ramp next to the airport. Aircraft operators fuel their own aircraft without the presence of Airport Authority personnel, with sales collected at the restaurant for the Airport Authority. Fuel is sold at going market rates. Tenants are permitted to have fueling operations in compliance with TAA, EPA, and state regulations. Fuel flowage fees are charged to fuel operators. Current rates are between eight and nine cents per gallon.

The capital improvement program includes another self-fueling facility along Taxiway D complete with a card reader system. Jet fueling is planned for the future main ramp area. This may be done by either the FBO's or the Airport Authority. Either way, fuel revenues can be expected to increase due to the higher amounts of fuel used by turbine-powered aircraft.

Other Income

There are other smaller and less reliable sources of income that can be considered at the airport. Other income typically includes landing fees, automobile parking, concession income, and special events.

Landing fees and automobile parking are not typically charged on general aviation airports due to the low return for the cost of collection. Landing fees on larger aircraft that use the airport may be considered, but could also be a deterrent to the use of the airport. The trade off could be more significant losses in potential fuel revenues that what could be gained from landing fees.

Fees from advertising and concessions in an airport-owned terminal building would be a means of helping to support the operating and construction costs of the facility. General aviation airports are often good locations for hosting special events such as air shows. While part of the interest in hosting special events is to draw attention to the airport's facilities, temporary use of available areas can also provide additional revenue.

CONTINUOUS PLANNING PROCESS

Experience has indicated that problems have materialized from the standard format of past planning documents. These problems center around a plan's inflexibility and inherent inability to deal with the issues that develop from unforeseen changes that may occur after it is completed. The format used in the development of this Master Plan has attempted to deal with this issue.

This section is called **Continuous Planning** for several reasons. First, to emphasize that planning is a **continuous process** that does not end with the completion of the Master Plan or a major project. Second, to try to recognize this without invalidating the overall Master Plan.

The primary issues upon which this Master Plan is based will remain valid for several years. In fact, they are likely to remain valid well into the next century. The primary goal is for the airport to maintain a self-sustaining position without sacrificing service and accommodations to the public which it serves.

The following schedules are designed to aid airport management in continuous evaluation of airport activity growth in order to program the appropriate rate for airport development. This should not be construed as a commitment by the Tucson Airport Authority, private investors, the FAA, or ADOT to the development shown. Rather, it is hoped that the inclusion of these annual discussions will help decision makers recognize the ongoing planning needs of the airport and allow the Master Plan to become a valuable tool in this process.

The real value of a usable master plan is that it keeps the issues and objectives in the mind of the user. Consequently, the user is better able to recognize change and its effect. In addition, it can make the decision to undertake this master plan much more cost effective by extending the period that it remains valid and eliminating the need for costly updates. Interim updating can be done by the user, and if the user's experience with this plan is good, he/she will improve the plan's effectiveness.

Guidelines and worksheets are included in the following section on an annual basis for the first five years (fiscal years 2000-2004). Summary worksheets are also included for the remainder of the Short Term, Intermediate Term, and Long Range planning horizons. All estimated development costs are based upon 1999 dollars. Therefore, costs must be adjusted by the appropriate inflation rate factor in effect at the particular time of development.

SHORT TERM PLANNING HORIZON FY 2000 Airport Development Program

The table provided below has been designed to note the funds available so that they can be kept in mind while analyzing the development factors

outlined for this period on the next few pages. The table also provides a reminder of other potential sources that might be used in critical situations.

Airport Funds	\$
Bonds	\$
Other	\$
TOTAL	\$

As a reminder, airport development should be keyed to demand (actual activity) rather than to a specific time frame (forecast activity). The spaces provided below allow actual activity data to be recorded for comparison with the planning horizon envelope. This

should be the first step in the process of initiating the recommended development program for this period. Significant increases or decreases in actual activity may justify acceleration or deceleration of the airport development schedule.

Activity	1998	1999	Short Term
	Actual Levels	Actual Levels	Horizon Level
Based Aircraft	234		265
Operations	156,000		184,000

Based on the activity comparison above, should the recommended development schedule be maintained? Have new problems, needs, or development potentials occurred which may impact

the development program? What adjustments in the development schedule are required to effectively deal with these factors?

In order to maintain the continuity of a phased development plan and to meet the horizon activity demand levels, the following development items are recommended. Each item is numbered

SHORT TERM PLANNING HORIZON FY 2000 Development Funding

Deve	lopment Item	Total Cost	FAA Eligible	ADOT	TAA
3. Install TW D F	k-24L ve Fuel Island (Taxiway D) uel Island Ramp Vehicle Fuel Tank	\$1,120,000 201,000 241,000 40,000	\$1,019,872 0 219,455 0	\$50,064 0 10,773 0	\$50,064 201,000 10,773 40,000
Subtotal for 20	00	\$1,602,000	\$1,239,327	\$60,837	\$301,837

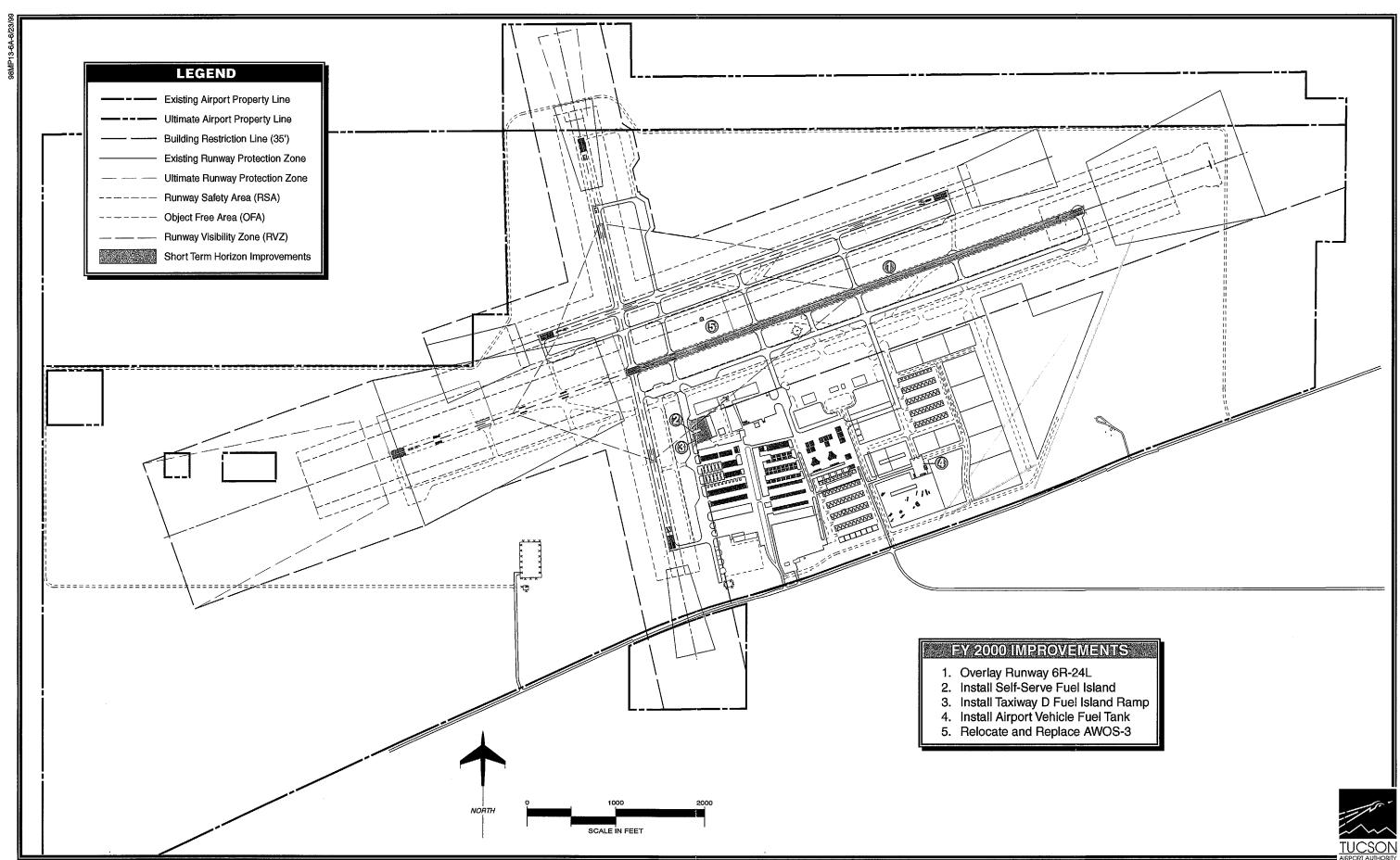
Inflation Adjustment: ___% X \$1,602,000 = \$_____

Plus or Minus Other Proposed Development:

Development Item	Total Cost	FAA Eligible	ADOT	TAA
1.				
2.				
3.				
4.				
5.				
TOTAL				

Development anticipated for this year includes an overlay of the shoulders on Runway 6R-24L and the development of a self-serve fuel island along Taxiway D to serve users on the east side of the airport.

Since the FAA Fiscal Year is from October through September, efforts should already be underway to identify the development that will be eligible for federal or other funding during this period. The Airport Authority should have applications submitted early for the maximum funding possible in case additional funds become available.



SHORT TERM PLANNING HORIZON (Continued) FY 2001 Airport Development Program

The table provided below has been designed to note the funds available so that they can be kept in mind while analyzing the development factors

outlined for this period on the next few pages. The table also provides a reminder of other potential sources that might be used in critical situations.

Airport Funds	\$
Bonds	\$
Other	\$
TOTAL	\$

As a reminder, airport development should be keyed to demand (actual activity) rather than to a specific time frame (forecast activity). The spaces provided below allow actual activity data to be recorded for comparison with the planning horizon envelope. This

should be the first step in the process of initiating the recommended development program for this period. Significant increases or decreases in actual activity may justify acceleration or deceleration of the airport development schedule.

Activity	1999	1999	Short Term
	Actual Levels	Actual Levels	Horizon Level
Based Aircraft	234		265
Operations	156,000		184,000

Based on the activity comparison above, should the recommended development schedule be maintained? Have new problems, needs, or development potentials occurred which may impact

the development program? What adjustments in the development schedule are required to effectively deal with these factors?

In order to maintain the continuity of a phased development plan and to meet the horizon activity demand levels, the following development items are recommended. Each item is numbered

SHORT TERM PLANNING HORIZON (Continued) FY 2001 Development Funding

	Development Item	Total Cost	FAA Eligible	ADOT	TAA
1.	Northside Property Acquisition (148 ac.)	\$592,000	\$539,075	\$26,462	\$26,462
2.	Reconstruct TW's B and D/North Apron	804,000	732,122	35,939	35,939
3.	Construct South Auto Parking Extension	9,000	0	0	9,000
4.	Overlay Access Roads and Parking Lot	158,000	0	142,200	15,800
5.	Construct Partial Parallel Taxiway E	363,000	330,548	16,226	16,226
6.	Install Perimeter Security Fence	358,000	325,995	16,003	16,003
7.	Install Security Camera System	50,000	0	0	50,000
	Subtotal FY 2001	\$2,334,000	\$1,927,740	\$236,830	\$169,430

Inflation Adjustment: ___% X \$2,334,000 = \$_____

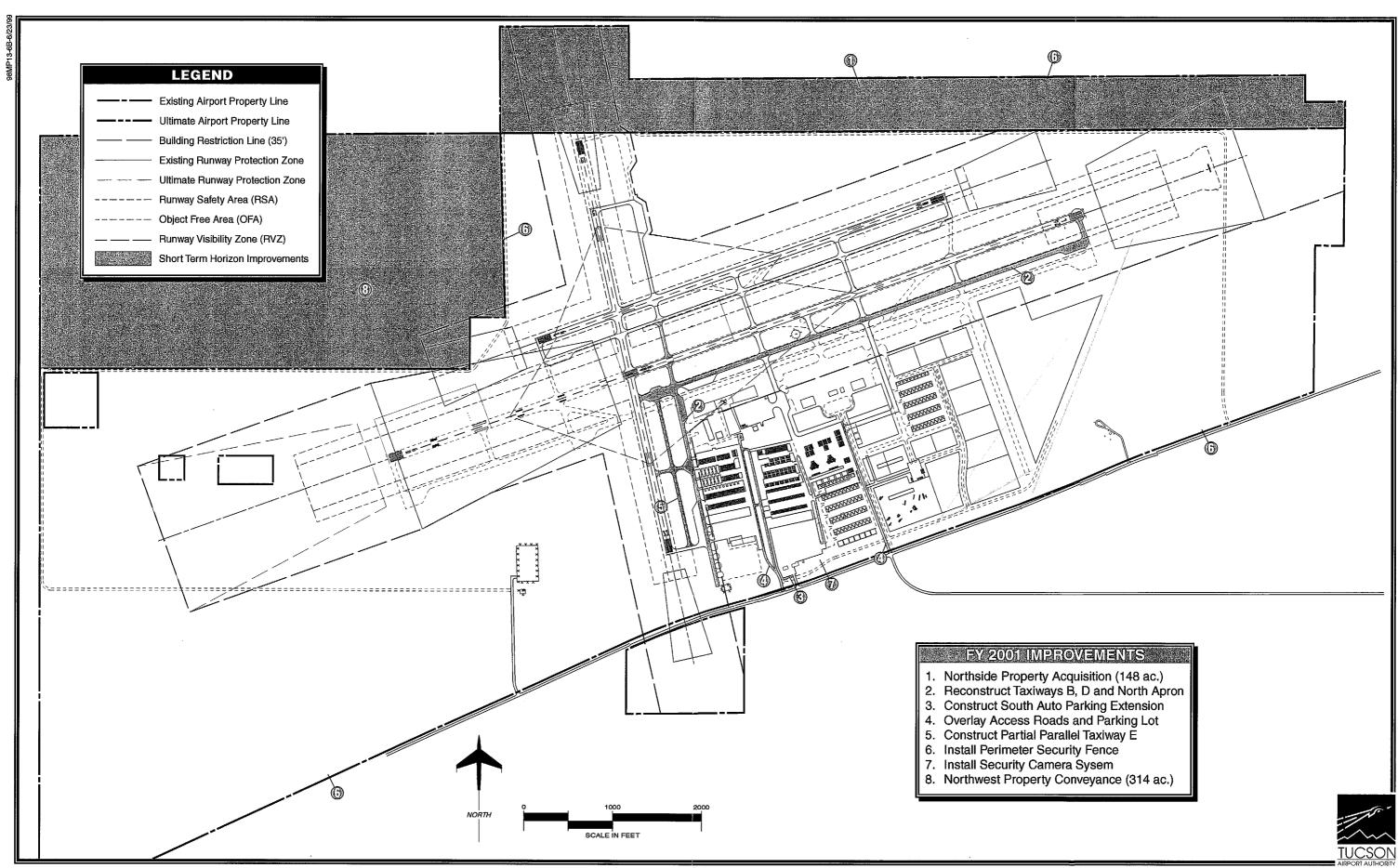
Plus or Minus Other Proposed Development:

Development Item	Total Cost	FAA Eligible	ADOT	TAA
1.				
2.				
3.				
4.				
. 5.				
TOTAL				

Projects programmed for this year include property acquisition on the north side of the airport, continued pavement rehabilitation, perimeter fencing, a security camera system, and an extension of the restaurant parking lot.

Since the FAA Fiscal Year is from October through September, efforts

should already be underway by January 2000 to identify the development that will be eligible for federal or other funding during this period. The Airport Authority should have applications submitted early for the maximum funding possible in case additional funds become available.



SHORT TERM PLANNING HORIZON (Continued) FY 2002 Airport Development Program

The table provided below has been designed to note the funds available so that they can be kept in mind while analyzing the development factors outlined for this period on the next few pages. The table also provides a reminder of other potential sources that might be used in critical situations.

Airport Funds	\$
Bonds	\$
Other	\$
TOTAL	\$

As a reminder, airport development should be keyed to demand (actual activity) rather than to a specific time frame (forecast activity). The spaces provided below allow actual activity data to be recorded for comparison with the planning horizon envelope. This

should be the first step in the process of initiating the recommended development program for this period. Significant increases or decreases in actual activity may justify acceleration or deceleration of the airport development schedule.

Activity	1999	2000	Short Term
	Actual Levels	Actual Levels	Horizon Level
Based Aircraft	234		265
Operations	156,000		184,000

Based on the activity comparison above, should the recommended development schedule be maintained? Have new problems, needs, or development potentials occurred which may impact

the development program? What adjustments in the development schedule are required to effectively deal with these factors?

In order to maintain the continuity of a phased development plan and to meet the horizon activity demand levels, the following development items are recommended. Each item is numbered

SHORT TERM PLANNING HORIZON (Continued) FY 2002 Development Funding

	Development Item	Total Cost	FAA Eligible	ADOT	TAA
1.	Construct TW 5 Extension	\$109,000	\$99,255	\$4,872	\$4,872
2.	Realign TW 2	203,000	184,852	9,074	9,074
3.	Demolish Building 74	50,000	0]	0	50,000
4.	Demolish Building 75	80,000	-0	-0	80,000
5.	Construct Perimeter Service Road (Phase I)	596,000	542,718	26,641	26,641
6.	Upgrade Existing Airfield Drainage System	1,397,000	1,272,108	62,446	62,446
7.	Install Box Culverts under Runway 6R RSA	1,738,000	1,582,623	77,689	77,689
	Subtotal FY 2002	\$4,173,000	\$3,681,556	\$180,722	\$310,722

Inflation Adjustment: ___% X \$4,173,000 = \$____

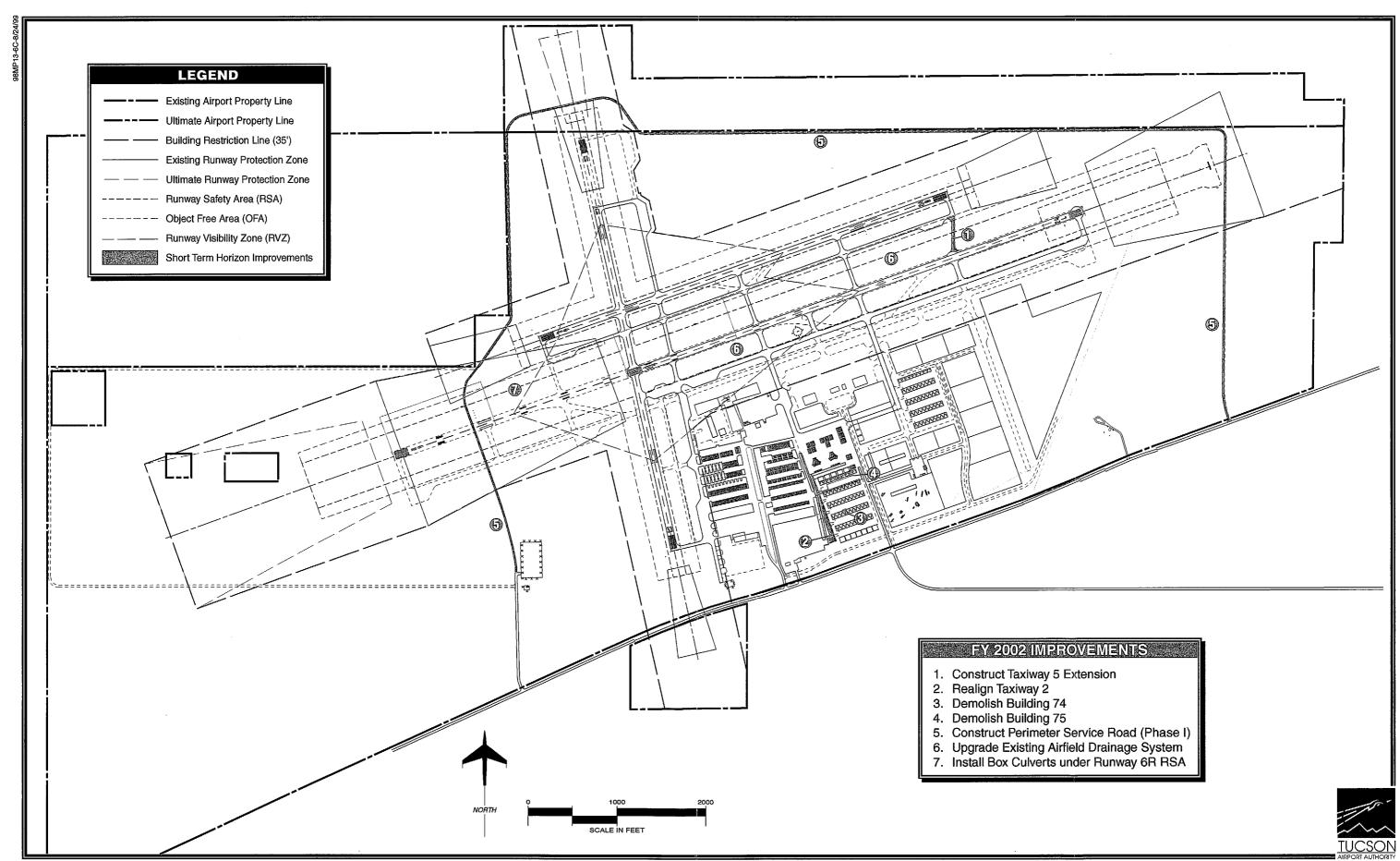
Plus or Minus Other Proposed Development:

Development Item	Total Cost	FAA Eligible	ADOT	TAA
1.				
2.				
3.				
4.				
5.				
TOTAL			-	

Development this year includes an extension of Taxiway 5 between the parallel runways, realignment of Taxiway 2 into a single taxiway that meets design standards, removal of three older buildings to make way for new hangar space, the initial phase of the implementation of the airport's basin management plan.

Since the FAA Fiscal Year is from October through September, efforts

should already be underway by January 2001 to identify the development that will be eligible for federal or other funding during this period. The Airport Authority should have applications submitted early for the maximum funding possible in case additional funds become available.



SHORT TERM PLANNING HORIZON (Continued) FY 2003 Airport Development Program

The table provided below has been designed to note the funds available so that they can be kept in mind while analyzing the development factors outlined for this period on the next few pages. The table also provides a reminder of other potential sources that might be used in critical situations.

Airport Funds	\$
Bonds	\$
Other	\$
TOTAL	\$

As a reminder, airport development should be keyed to demand (actual activity) rather than to a specific time frame (forecast activity). The spaces provided below allow actual activity data to be recorded for comparison with the planning horizon envelope. This

should be the first step in the process of initiating the recommended development program for this period. Significant increases or decreases in actual activity may justify acceleration or deceleration of the airport development schedule.

Activity	1999	2001	Short Term
	Actual Levels	Actual Levels	Horizon Level
Based Aircraft	234		265
Operations	156,000		184,000

Based on the activity comparison above, should the recommended development schedule be maintained? Have new problems, needs, or development potentials occurred which may impact

the development program? What adjustments in the development schedule are required to effectively deal with these factors?

In order to maintain the continuity of a phased development plan and to meet the horizon activity demand levels, the following development items are recommended. Each item is numbered

SHORT TERM PLANNING HORIZON (Continued) FY 2003 Development Funding

	Development Item	Total Cost	FAA Eligible	ADOT	TAA
1.	Airfield Pavement Preservation	\$540,000	\$0	\$486,000	\$54,000
2.	Install PAPI-2 RW 6L-24R	50,000	45,530	2,235	2,235
3.	Widen and Strengthen RW 6R-24L and TW B	2,027,000	1,845,786	90,607	90,607
4.	Extend RW 6R-24L and TW C to 6,300 ft.	1,601,000	1,457,871	71,565	71,565
5.	Strengthen TW 4	106,000	96,524	4,738	4,738
6.	Install REIL's on RW 24L	35,000	31,871	1,565	1,565
7.	Install Infield Drainage Culverts	1,738,000	1,582,623	77,689	77,689
	Subtotal FY 2003	\$6,097,000	\$5,060,204	\$734,398	\$302,398

Inflation Adjustment: ___% X \$6,097,000 = \$_____

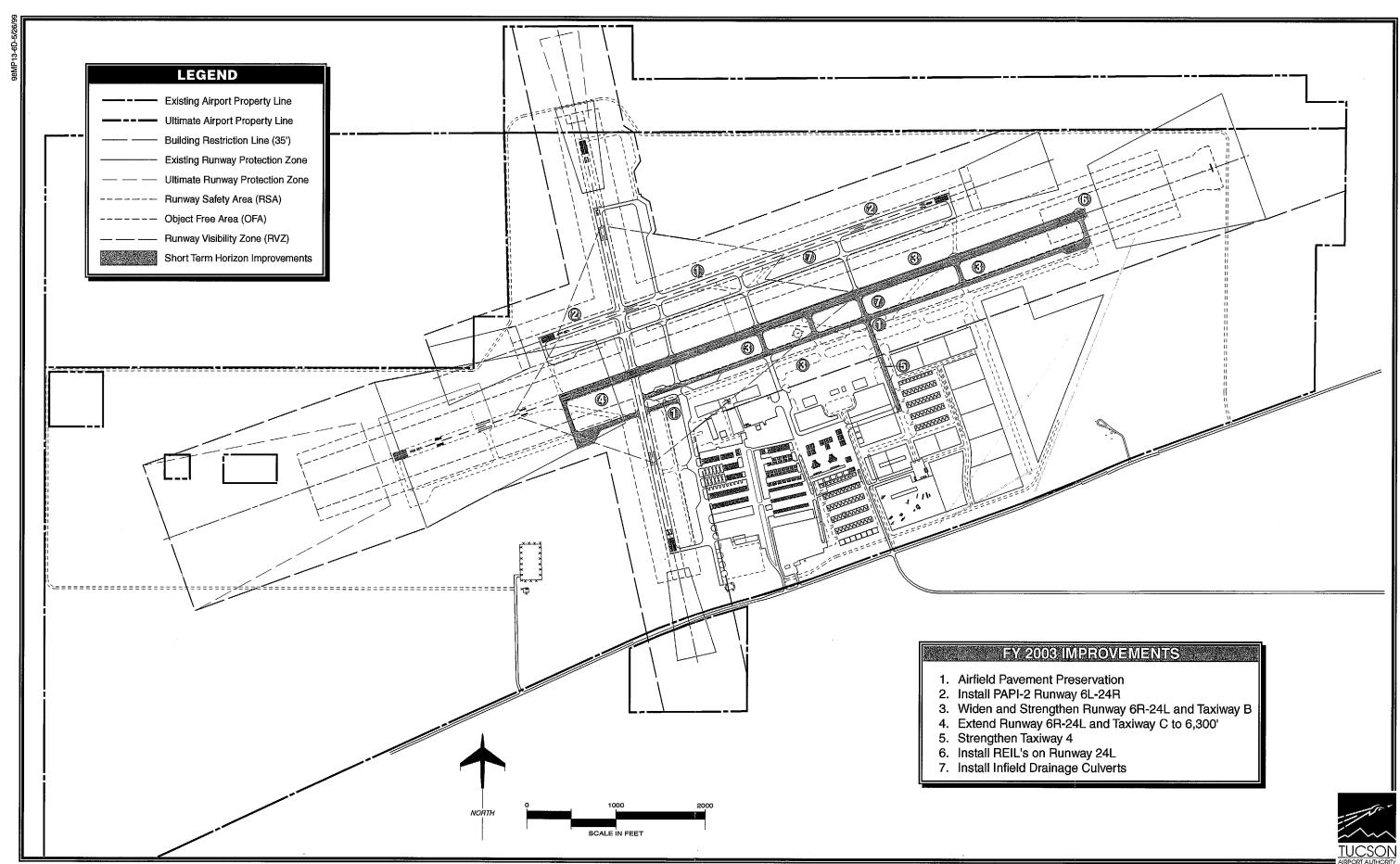
Plus or Minus Other Proposed Development:

Development Item	Total Cost	FAA Eligible	ADOT TAA
1.			
2.			
3.			
4.			
5			
TOTAL			

Continued pavement rehabilitation projects and stormwater drainage projects are included this year. Upgrading the primary runway to meet B-III and D-II standards is also programmed. This includes strengthening the associated taxiways as well.

Since the FAA Fiscal Year is from October through September, efforts

should already be underway by January 2002 to identify the development that will be eligible for federal or other funding during this period. The Airport Authority should have applications submitted early for the maximum funding possible in case additional funds become available.



SHORT TERM PLANNING HORIZON (Continued) FY 2004 Airport Development Program

The table provided below has been designed to note the funds available so that they can be kept in mind while analyzing the development factors

outlined for this period on the next few pages. The table also provides a reminder of other potential sources that might be used in critical situations.

Airport Funds	\$
Bonds	\$
Other	\$
TOTAL	\$

As a reminder, airport development should be keyed to demand (actual activity) rather than to a specific time frame (forecast activity). The spaces provided below allow actual activity data to be recorded for comparison with the planning horizon envelope. This

should be the first step in the process of initiating the recommended development program for this period. Significant increases or decreases in actual activity may justify acceleration or deceleration of the airport development schedule.

Activity	1999	2002	Short Term
	Actual Levels	Actual Levels	Horizon Level
Based Aircraft Operations	234 156,000		265 184,000

Based on the activity comparison above, should the recommended development schedule be maintained? Have new problems, needs, or development potentials occurred which may impact

the development program? What adjustments in the development schedule are required to effectively deal with these factors?

In order to maintain the continuity of a phased development plan and to meet the horizon activity demand levels, the following development items are recommended. Each item is numbered

SHORT TERM PLANNING HORIZON (Continued) FY 2004 Development Funding

Development Item	Total Cost	FAA Eligible	ADOT	TAA
Construct Helipad Construct Helipad Taxiway and Apron Construct Helipad Auto Parking and Access Construct Self-Maintenance Bay	\$54,000 93,000 25,000 42,000	\$49,172 84,686 0 0	\$2,414 4,157 22,500 0	\$2,414 4,157 2,500 42,000
Subtotal FY 2004	\$214,000	\$133,858	\$29,071	\$51,071

Inflation Adjustment: ___% X \$214,000 = \$_____

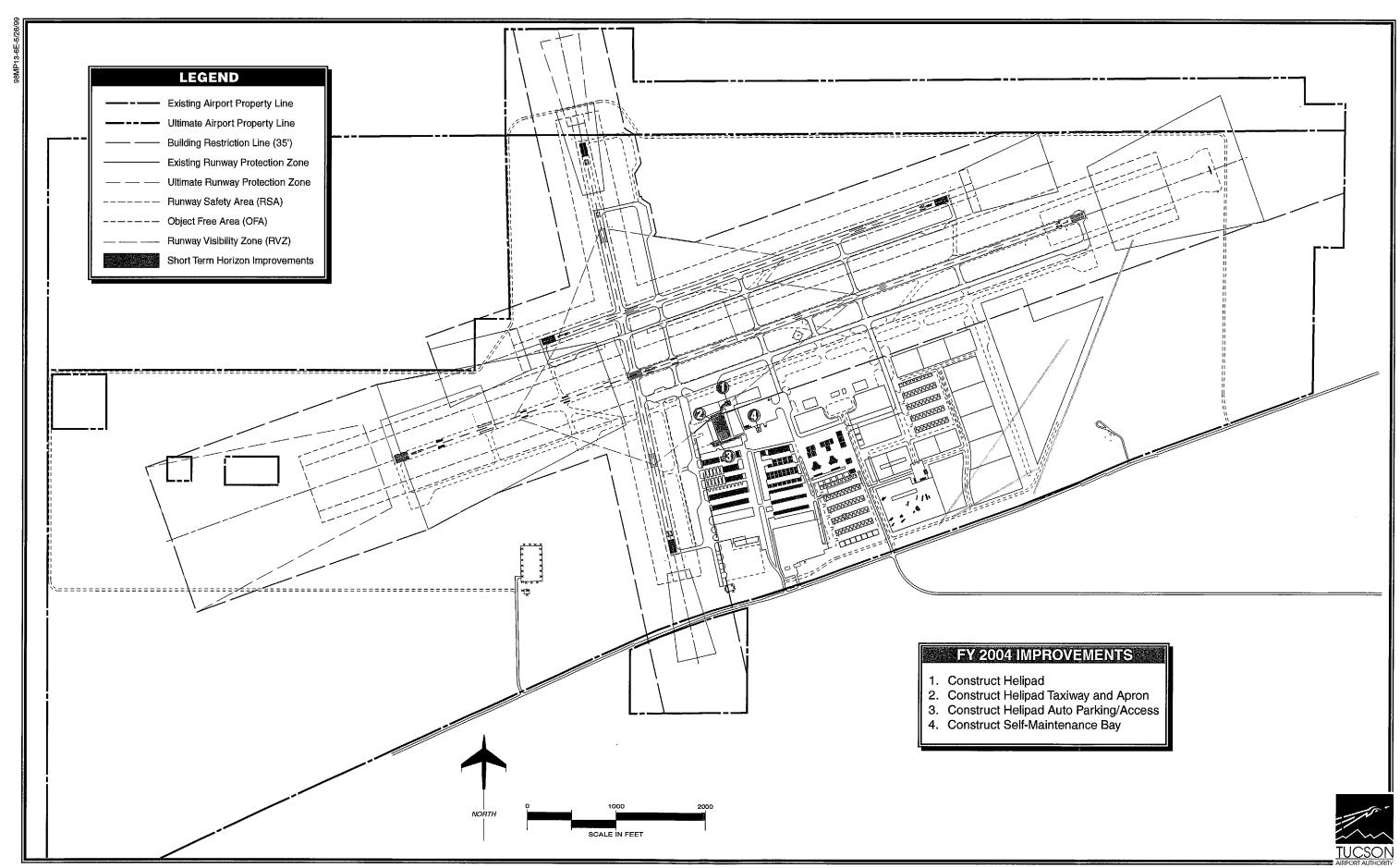
Plus or Minus Other Proposed Development:

Development Item	Total Cost	FAA Eligible	ADOT	TAA
1.				
2.				
3.				
4.				
5.				
TOTAL				

Projects this year are concentrated in the northeast portion of the terminal area. They include helicopter facilities as well as an aircraft self-maintenance bay near the aircraft washrack.

Since the FAA Fiscal Year is from October through September, efforts

should already be underway by January 2003 to identify the development that will be eligible for federal or other funding during this period. The Airport Authority should have applications submitted early for the maximum funding possible in case additional funds become available.



INTERMEDIATE PLANNING HORIZON Airport Development Program

The table provided below has been designed to note the funds available so that they can be kept in mind while analyzing the development factors

outlined for this period on the next few pages. The table also provides a reminder of other potential sources that might be used in critical situations.

Airport Funds	\$
Bonds	\$
Other	\$
TOTAL	\$

As a reminder, airport development should be keyed to demand (actual activity) rather than to a specific time frame (forecast activity). The spaces provided below allow actual activity data to be recorded for comparison with the planning horizon envelope. This

should be the first step in the process of initiating the recommended development program for this period. Significant increases or decreases in actual activity may justify acceleration or deceleration of the airport development schedule.

Activity	Short Term	Actual	Intermediate
	Horizon Levels	Annual Levels	Horizon Levels
Based Aircraft	265		292
Operations	184,000		208,000

Based on the activity comparison above, should the recommended development schedule be maintained? Have new problems, needs, or development potentials occurred which may impact

the development program? What adjustments in the development schedule are required to effectively deal with these factors?

In order to maintain the continuity of a phased development plan and to meet the horizon activity demand levels, the following development items are recommended. Each item is numbered

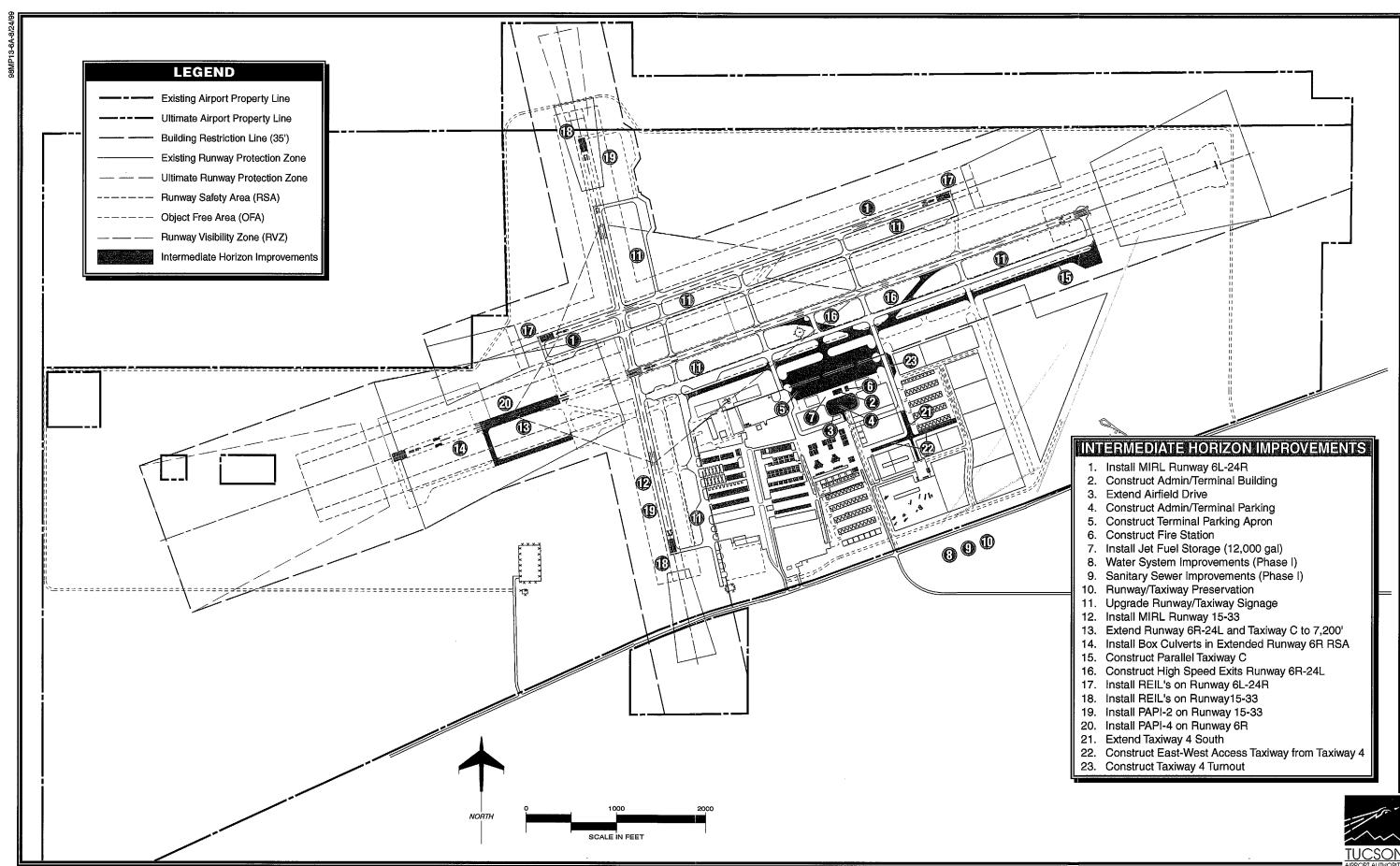
INTERMEDIATE PLANNING HORIZON (Continued) Development Funding

	Development Item	Total Cost	FAA Eligible	ADOT	TAA			
1.	Install MIRL RW 6L-24R	\$167,000	\$152,070	\$7,465	\$7,465			
2.	Construct Admin/Terminal Building	664,000	0	332,000	332,000			
3.	Extend Airfield Drive	99,000	90,149	4,425	4,425			
4.	Construct Admin/Terminal Parking	91,000	0	81,900	9,100			
5.	Construct Terminal Parking Apron	1,917,000	1,745,620	85,690	85,690			
6.	Construct Fire Station	591,000	0	532,260	59,140			
7.	Install Jet Fuel Storage (12,000 gal.)	153,000	0	0	153,000			
8.	Water System Improvements (Phase I)	1,401,000	. 0	1,260,000	140,100			
9.	Sanitary Sewer Improvements (Phase I)	1,024,000	0	921,600	102,400			
10.	Runway/Taxiway Preservation	402,000	366,061	17,969	17,969			
11.	Upgrade Runway/Taxiway Signage	483,000	439,820	21,590	21,590			
12.	Install MIRL RW 15-33	136,000	123,842	6,079	6,079			
13.	Extend RW 6R-24L and TW C to 7,200 ft.	1,371,000	1,248,433	61,284	61,284			
14.	Install Box Culverts in Extended RW 6R RSA	550,000	500,830	24,585	24,585			
15.	Construct Parallel Taxiway C	1,654,000	1,506,132	73,934	73,934			
16.	Construct High Speed Exits RW 6R-24L	260,000	236,756	11,622	11,622			
17.	Install REIL's on RW 6L-24R	70,000	63,742	3,129	3,129			
18.	Install REIL's on RW 15-33	70,000	63,742	3,129	3,129			
19.	Install PAPI-2 on RW 15-33	50,000	45,530	2,235	2,235			
20.	Install PAPI-4 on RW 6R	40,000	36,424	1,788	1,788			
21.	Extend TW 4 South	97,000	88,328	4,336	4,336			
22.	Construct East-West Access TW from TW 4	172,000	156,623	7,688	7,688			
23.	Construct TW 4 Turnout	48,000	43,709	2,146	2,146			
INT	ERMEDIATE HORIZON TOTAL	\$11,510,400	INTERMEDIATE HORIZON TOTAL \$11,510,400 \$6,907,812 \$3,467,754 \$1,134,834					

Inflation Adjustment:	% X \$11.510.000 = \$
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Plus or Minus Other Proposed Development:

College Co.	Development Item	Total Cost	FAA Eligible	ADOT	TAA
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TOTAI					



LONG RANGE PLANNING HORIZON Airport Development Program

The table provided below has been designed to note the funds available so that they can be kept in mind while analyzing the development factors outlined for this period on the next few pages. The table also provides a reminder of other potential sources that might be used in critical situations.

Airport Funds	\$
Bonds	\$
Other	\$
TOTAL	\$

As a reminder, airport development should be keyed to demand (actual activity) rather than to a specific time frame (forecast activity). The spaces provided below allow actual activity data to be recorded for comparison with the planning horizon envelope. This

should be the first step in the process of initiating the recommended development program for this period. Significant increases or decreases in actual activity may justify acceleration or deceleration of the airport development schedule.

Activity	Intermediate Term	Actual	Long Range
	Horizon Levels	Annual Levels	Horizon Levels
Based Aircraft	292		353
Operations	210,000		261,000

Based on the activity comparison above, should the recommended development schedule be maintained? Have new problems, needs, or development potentials occurred which may impact

the development program? What adjustments in the development schedule are required to effectively deal with these factors?

In order to maintain the continuity of a phased development plan and to meet the horizon activity demand levels, the following development items are recommended. Each item is numbered

LONG RANGE PLANNING HORIZON (Continued) Development Funding

	Development Item	Total Cost	FAA Eligible	ADOT	TÄÄ
1.	Construct Perimeter Service Road (Phase II)	\$1,292,000	\$1,176,495	\$57,752	\$57,752
2.	Extend RW 6R-24L and TW C to 8,300 ft.	1,462,000	1,331,297	65,351	65,351
3.	Construct High Speed Exit RW 6R	130,000	118,378	5,811	5,811
4.	Construct High Speed Exits RW 6L-24R	117,000	106,540	5,230	5,230
5.	Sanitary Sewer Improvements (Phase II)	314,000	0	282,600	31,400
6.	Install MALSR on RW 6R	450,000	409,770	20,115	20,115
7.	Install SALS on RW 24L	175,000	159,355	7,823	7,823
8.	Install MITL on TW C and Exits	412,000	375,167	18,416	18,416
9.	Install MITL on TW's D & E and Exits	276,000	251,326	12,337	12,337
10.	Install MITL on TW A and Exits	276,000	251,326	12,337	12,337
11.	Widen Airfield Drive	197,000	179,388	8,806	8,806
12.	Extend TW 5 South	581,000	529,059	25,971	25,971
13.	Construct TW 5 Turnout	48,000	43,709	2,146	2,146
14.	Extend Connector Road East	400,000	364,240	17,880	17,880
15.	Extend RW 15-33 and TW D to 4,800 ft.	695,000	632,867	31,067	31,067
16.	Construct Channel and Detention Basins	3,288,000	2,994,053	146,974	146,974
17.	Water System Improvements (Phase II)	770,000	0	693,000	77,000
LO	IG RANGE HORIZON TOTAL	\$10,883,000	\$8,922,969	\$1,413,615	\$546,415

Inflation Adjustment: ___% X \$10,883,000 = \$_____

Plus or Minus Other Proposed Development:

	Development Item	Total Cost	FAA Eligible	ADOT	TAA
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
TOTAL					

